

## Patent Abstracts of Japan

PUBLICATION NUMBER : 05281699  
PUBLICATION DATE -- -- : 29-10-93.

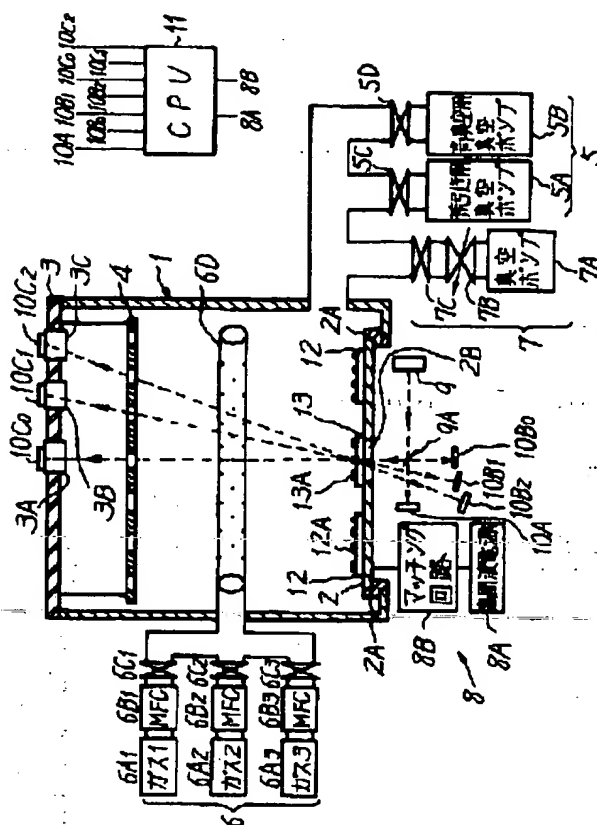
APPLICATION DATE : 01-04-92  
APPLICATION NUMBER : 04078119

APPLICANT : NIKON CORP;

INVENTOR : MIZUTANI HIDEO;

INT.CL. : G03F 1/08 C23F 4/00 H01L 21/66 //  
H01L 21/302

TITLE : ETCHING DEVICE



**ABSTRACT :** PURPOSE: To obtain the etching device which decides the optimum end of etching in real time.

**CONSTITUTION:** This etching device has a light source 9 which irradiates a diffraction grating 13A with monochromatic light at the time of forming a prescribed pattern 12A on a sample 12 and the diffraction grating 13A on a dummy 13 and simultaneously etching the sample 12 and the dummy 13 and a detector group 10 (10A, 10B<sub>0</sub> to 10B<sub>3</sub>, 10C<sub>0</sub> to 10C<sub>3</sub>) which detects the quantity of the diffracted light from the diffraction grating 13A. A CPU 11 has an etching end deciding means 11 which determines the duty ratio a/p of the diffraction grating 13A in accordance with the detection signal from the detector 10, then determines the groove depth (d) (groove depth) of the diffraction grating 13A from this duty ratio a/p and the detection signal and ends the etching when the groove depth (d) is of a prescribed quantity.

COPYRIGHT: (C)1993,JPO&Japio